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ABSTRACT

This study surveyed 1994 graduates (N=91) of the University of Kentucky College of Medicine (UKCM) regarding their satisfaction with the medical education they received at the school. The Class of 1994 was the last to finish before the implementation of a curriculum reform initiative designed to increase active student learning, integrate classroom and clinical knowledge, and promote self-assessment and life-long learning. Graduates were surveyed by telephone or mailed questionnaire. Although 96 percent of the respondents were generally satisfied with their educational experience at UKCM, five specific areas were identified where graduate responses implied a need for improvement in the educational process: (1) patient risk assessment and wellness education; (2) student evaluation; (3) integration of basic and clinical content; (4) issues relating to the cost of medical care; and (5) the use of computer technology. Contains four graphs and two tables. (MDM)

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ED 388 123

University of Kentucky College of Medicine
Graduating Seniors' Satisfaction with their Medical Education--May 1994

by

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Abstract

To collect baseline information from the last graduating class of the University of Kentucky to have undergone the traditional curriculum (prior to the implementation of the RWJ grant), we composed a survey of nine general questions about graduates' medical education experiences. We were able to interview 77 of the 94 graduates by telephone and an additional 14 graduates returned their surveys by mail (97% overall). Most notably, 96% of the responding graduates indicated that they were generally satisfied with their UKCM educational experiences. The average percentage of positive responses from graduates across all items was 72% and for specific items ranged from a low of 31% (Neither the amount nor the quality of instructions need to be changed) to a high of 95% (Satisfied with training in communication skills). The implications of this study include a need to tighten teaching schedules, specifying learning expectations and evaluation procedures more precisely, and establishing more appropriate levels of patient-care responsibility with "more" clinical experience so that fourth-year students are placed clearly at a higher level of sophisticated problem solving than third-year clerks. Responses from graduates indicated that the curricular areas on which the RWJ grant focuses could be improved. To track the impact of curricular changes related to the RWJ grant on our students' educational experiences, we plan to administer a very similar survey to each of the next four graduating classes.

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UKCM Graduating Seniors' Satisfication with their Medical Education--May 1994

Introduction/Background

For the past several years, on the national scene, there have been calls for substantial reform in medical education. Locally the need for educational change has become increasingly apparent. The faculty and students of the University of Kentucky College of Medicine (UKCM) sought an educational experience that would address the need for balance between: the acquisition of medical knowledge and the development of clinical skills, attitudes, and values; the amount of passive learning and the need for intellectual interaction; teaching about the diagnosis and treatment of disease and teaching about disease prevention and health promotion; and care for the individual and concern for the community.

With the help of a grant from the Robert Wood Johnson Foundation (RWJ), UKCM has responded to perceived educational needs by planning, funding, and implementing a new medical curriculum. The new curriculum increases the amount of active student learning, reduces dependency on passive methods for the transfer of information, promotes self-assessment and life-long learning, increases the variety of teaching and learning approaches, and integrates the teaching of medical science and clinical practice throughout the curriculum.

There have been so many changes in the educational program that a program evaluation approach has been designed to track the changes as well as their immediate effects and long term impact. An important part of these evaluation procedures is the collection of baseline information from graduates in the class of 1994 who were unaffected by the educational reformation.

Purpose

Our purpose for conducting the senior exit survey was to obtain opinions from graduates regarding their satisfaction with their medical education. We selected a broad range of items to sample elements of the curriculum that would be experienced by our medical students in both the traditional and the RWJ years. We hope to show that graduates' opinions will become more positive across time on those experiences targeted by the objectives of the RWJ grant (e.g., medical care cost reduction, computer usage, testing, feedback, etc.). We also hope that we see more favorable ratings of overall satisfaction of our graduates' educational experiences at UKCM.

Method

We constructed a nine-item survey (see Table 1 for the wording of the items) to be administered by telephone. The design of the survey required interviewers to prompt each graduate to indicate whether or not the question was true for them. Graduates' comments were recorded by the interviewer. We randomly assigned each graduate to one of four groups, so that we could compare groups to determine bias should non-response rate be a problem. Prior to making our telephone interview attempts, we sent each graduate a letter explaining that we would be calling them within two to three weeks to ask about their educational experiences. We made up to five calls to each graduate to obtain a telephone interview. Following the fifth attempt at a telephone interview, we sent a letter and a copy of the survey to each non-responding graduate asking them to return the survey by mail.

Results/Discussion

In what seemed like an eternity of waiting for the "last" completed survey to be returned, with one completed survey arriving in the mail each day for eight days (and the last arrived five weeks later!), we stopped entering data into our data base when we had a 97% return rate. We computed chi square tests for response bias among the four groups of graduates and among graduates interviewed by telephone or returning a mail survey and found no significant effects due to interviewer or type of survey method. In addition, we computed a one-way analysis of variance on the average percentage of positive responses to items obtained from each graduate by interviewer group and by type of return (telephone versus mail) and found no significant differences for these comparisons.

We present in three graphs the percent of graduates responding positively to each of the items for all graduates (Graph 1), for graduates by interviewer group (Graph 2), and for graduates by survey type (Graph 3). We used the percentages of graduates making a positive response to each item to arrange the items on all three graphs from the greatest percentage of graduates to the smallest percentage of graduates responding positively to the item. Also, we include as a part of the display the average percentage of positive responses for all items. The legend for all three graphs (Table 1) provides the wording of each item and the percentages for each interviewer group, along with the percentages for all graduates for each item, arranged in the order that the items appear (left to right) on each graph. We also present (in Graph 4) our estimates of the lowest and highest percentages possible for each item based on a 91% (86 of 94 graduates) return rate.

Of interest is our comparison of pairs of survey items to each other. We used McNemar's test of correlated proportions which indicates if changes of percentages of graduates responding positively to one item and negatively to another item, and vice-versa are significant. These results are displayed in Table 2.

This table may be used to answer the question "Are there significant differences between graduate changes in responses for any given pair of items?" Item pairs denoted by a "00" indicate significant difference at or beyond the .001 level (for example, 96% in Item 1 with 79% in Item 3). One item pair (Item 1 with Item 5) was significant at the .01 level. Item pairs where there was little spread between two percentages (e.g., Item 1 and Item 7, 96% and 95% respectively) were not significantly different from each other (ND).

Even though a large percentage of graduates (96%, Item 1) were generally satisfied with their educational experiences at UKCM, graduates' responses, as presented in Table 2, imply that specific experiences could have been better. For example, the significant differences indicated in between Item 1 (Overall Satisfaction) and Item 3 (Student Evaluation System) would suggest that graduates feel the evaluation system should be improved. In all, there were five specific areas where graduate responses imply a need for improvement in the educational process: patient risk assessment & wellness education; student evaluation; integration of basic science and clinical content; issues relating to the cost(s) of medical care; and, use of computer technology. These five

areas are currently receiving major emphasis in the revised Kentucky medical curriculum, and the results of this study indicate support for curricular revisions that address these issues.

Graduate Comments

The summary of interview responses from members of the Class of 1994 is based on the written record as prepared by the interviewers as well as their recollection of additional data presented by the interviewees. We have arranged the questions and comments in the same order as the results displayed in the graphs along with the percentage of graduates responding positively.

Item 1 (96% Satisfied). Overall, were you generally satisfied or generally dissatisfied with the educational experiences you had at UKCM?

Although generally satisfied with their educational experience at UKCM, 1994 graduating seniors did suggest the need for improved integration of curricular topics and particularly overall organization of the academic endeavor. There was some feeling that administration needed to be tightened so that teaching schedules particularly in the clinical years, were met and course administrative procedures followed. Graduates noted that the fourth year should provide for additional patient care responsibility up one notch from what was expected as a third year clerk. The opportunity for primary care experience was well received. Graduates were positive about their treatment as students although there was some feeling that certain learning experiences fostered excessive competition. Overall, the faculty was viewed as having done a good job.

Item 7 (95% Yes). Are you satisfied with the training you have received regarding development of effective skills for communicating with patients and members of a health care team (i.e., other doctors, nurses, PAs, etc.)?

Most graduates were pleased with their training in the development of effective skills in communication. There was some level of comment about the need to extend these skills to include not only patients but other members of the health care team as well. The issue here has to do with the roles of non-MD health care providers and how clinical students should or should not respond. A few graduates noted that they could have used some help in improving their written patient care presentations. Overall, however, the graduates noted that this was one area that received substantial attention and that interaction with patients was eased considerably by the time devoted to developing interviewing skills during the first two years of instruction.

Item 2 (91% Yes). Overall, was the medical knowledge, clinical skills and professional attitudes you were expected to learn made clear?

Graduates emphasized the need to clarify student responsibilities in the clinical years. Frequently, graduates stated or implied that they had to find out what was expected of them on their own. This was accomplished by adapting to whatever a particular clinical service required. There was some feeling that a more rigorous orientation to each clinical service would have

proved useful as well as more attention to the teaching of particular clinical skills. Again, there was the recommendation that additional clinical examples be utilized in basic science teaching so that the relationship of basic science material to the clinical setting could be more easily recognized. Defining the course and clerkship expectations more completely would probably prove useful.

Item 5 (81% Yes). Do you feel you are well prepared to deal with issues related to patient risk assessment and patient wellness education?

The response to this question emphasized that the relevant issues were stressed in family practice and other primary care preparation and to some extent in preventive medicine but not in other clinical areas. Graduates felt they needed to know much more than they did about risk assessment. Wellness and nutrition were also emphasized as needing a defined focus of instruction. The overall view was that risk management and wellness were handled in a sporadic fashion and needed to be integrated in the curriculum so that the material and its implications would become a recognized part of each students' clinical thinking and problem solving. Graduates clearly believe in the importance of these areas to the medical curriculum but are concerned that they are not being sufficiently and consistently covered.

Item 3 (79% Yes). Based on the student evaluation system used at UKCM, are you satisfied overall with the self-knowledge you presently have regarding your strengths & weaknesses?

Graduates viewed the evaluation system utilized at UKCM as only modestly helpful. "Numbers" provided on the evaluation forms were felt to be subjective and not always reflective of real problems. Graduates felt that evaluation procedures needed to identify specific areas of weakness and that this, in any event, should be done at least mid-way through the course or clerkship. Most graduates suggested that they were their own best evaluators deciding, as they moved through the educational program, what they did or didn't know. There was some focus on whether or not attendings who provided evaluations in the clinical years really knew the people they were assessing or were dependent on other attendings and/or residents for this information. In summary, most graduates paid modest attention to the evaluation numbers (with the exception of surgery) but did read the written comments with care.

Item 4 (66% Yes). Do you feel that the basic sciences & clinical sciences were presented in appropriate support of each other during your medical education, so that you were enabled to solve biomedical problems typical of your clinical care experiences?

Comments generated by this question suggest that the bridge between the basic sciences and clinical experiences requires repair. Graduates had much to say about the not always clear relationship between basic science material and its application in later years. Many respondees felt that synthesis was left up to the students and that perspectives of the basic science instructors differed significantly from that of the clinicians. Thus, what was stressed early on might not be of consequence later in the educational process. Graduates cited the need to identify and elaborate on the specific use of

basic science information in the clinical context. They felt that more often than not they were left to their own devices in making the connection. Physical diagnosis and pharmacology were seen as courses critical to demonstrating the connection of the first two years of the medical curriculum to the second two years.

Item 6 (59% Yes). Do you feel you are well prepared to deal with issues related to reducing medical care costs?

Graduates feel unprepared in this area. Although costs are mentioned from time to time during the clinical years, it is also apparent that many tests and procedures are administered where the results may be of doubtful use. On the other hand, graduates said that clinical faculty did try to discuss medical costs, especially in surgery. Graduates felt the need for some preparation in medical economics and management, noting that they are entering a business world about which they know very little. As is true with responses to other questions, students pick-up information sporadically. Some graduates feel they know a little about cost-containment whereas others feel they know nothing at all. Once again, a consistent presentation of basic issues in cost-containment and medical economics seems called for. Graduates say that they know little about medical economics and that this area should be included in the curriculum, particularly relevant in these days of changes in the health care system.

Item 8 (51% Yes). Has your medical education prepared you to use computers and/or other information management technologies in your future education and medical practice?

This was a marginal area for most 1994 graduates. Most said they didn't learn much about computer usage while at UKCM. What they did learn came from family practice and surgery. Some said they learned computer skills in the computer laboratory while others noted that what they knew they had learned before coming to medical school. There was ambivalence about literature searches as a vehicle for learning about computer usage in the practice of medicine. Because of the variegated educational background of our students, there is a wide sweep of experience or lack thereof with computers. A consistent approach to mastering computer technology as a learning tool in managing medical school curriculum content is probably a necessary educational goal for the majority of UKCM students.

Item 9 (31% No). Do you feel there are subjects about which you should have received more or better instruction during your time here as a medical student?

In general, graduating students responding to this question seemed to want a somewhat more "practical" clinical experience with a "bridge" between didactic learning experiences and the actual care of patients. Graduates are concerned about improving, if not establishing, the basic science-clinical bridge. They note that seeing relationships requires an ongoing rather than sporadic teaching effort.

There were many and varied suggestions for content improvement in the curriculum. Many graduates interviewed saw themselves as being deficient in

starting IVs, doing deep lines, reading chest X-rays, having experience with EKGs, interpreting blood specimens, running ventilators and drips. These concerns merged into the issue of whether they had sufficient basic experience in patient management and follow up. Some complained that there was not sufficient time devoted to learning about common diseases or indeed time to be on the wards. Along with a concern about clinical procedures knowledge, graduates also noted that there was little time devoted to learning about business aspects of medicine, patient care costs and insurance issues.

With respect to specific subject matter areas, graduates wanted additional teaching in dermatology, emergency medicine, nutrition, adolescent medicine and radiology. A number of graduates noted that pharmacology should include more instruction in drug side effects and that neurology teaching should be strengthened.

Conclusions

Although we have focused on areas of the curriculum that graduates felt we could improve, it is important to note that the average percentage of positive responses from graduates across all items was 72% and that 96% of the graduates indicated that they were generally satisfied with their UKCM educational experiences. However, the implications of this study for making improvements may be summarized in a number of arenas, most of which deal with the clinical years. For example, there appears to be a need to tighten schedules. Instructors who are called away from teaching sessions need to ensure that back-up faculty are available to cover their assignments. Also, there is a need to establish levels of patient-care responsibility so that fourth-year students are placed clearly at a more sophisticated problem solving level than third-year clerks. Clinical clerks need to be monitored continually to establish the highest possible skills in written and oral communications concerning patient care. Almost all of the graduates wanted "more" clinical experience. Providing students practical experience with patients and procedures is required and should be an ongoing part of clinical preparation. Frequently, this means organized activities to learn clinical procedures for which graduates will be responsible as residents. In short, graduates want their medical education clearly and cleanly organized and administered. Although they understand that everything cannot be covered, they also feel that the learning goals should be crystal clear and that the instructional methodology should be effectively linked to those goals. Clerkships also need to be as precise as possible with respect to learning expectations and evaluation procedures. We do not seem to have hit upon an evaluation system with which our students feel comfortable. They complain that providing "numbers" does not necessarily make the system objective and rather than hearing about strengths and deficiencies after a lapse of time, more timely one-on-one interaction with instructors is desirable.

Finally, as mentioned above, there are five areas where graduate responses suggest that improvement in the educational process is needed: patient risk assessment and wellness education; student evaluation; integration of basic science and clinical content; issues relating to the costs of medical care and; use of computer technology. These areas are currently receiving major emphasis in the revised Kentucky medical curriculum, and the results of this study indicate graduate agreement with the curricular revisions that have been made.

Table 1

G R A P H L E G E N D

Survey of Graduating Seniors--May 1994
University of Kentucky College of Medicine

Percent of Graduates Responding Positively

Interviewer Groups						
AM	DM	DW	RJ	ITEM	ALL STUDENTS	Item Content
100	100	95	90	1	96	Overall, were you generally satisfied or generally dissatisfied with the educational experiences you had at UKCM?
95	95	95	94	7	95	Are you satisfied with the training you have received regarding development of effective skills for communicating with patients and members of a health care team (i.e., other doctors, nurses, PAs, etc.)?
95	85	90	94	2	91	Overall, was the medical knowledge, clinical skills and professional attitudes you were expected t learn made clear?
89	75	81	81	5	81	Do you feel you are well prepared to deal with issues related to patient risk assessment and patient wellness education?
74	80	81	81	3	79	Based on the student evaluation system used at UKCM, are you satisfied overall with the self-knowledge you presently have regarding your strengths & weaknesses?
75	71	70	72	ALL	72	All Items Combined
58	75	57	71	4	66	Do you feel that the basic sciences & clinical sciences were presented in appropriate support of each other during your medical education, so that you were enabled to solve biomedical problems typical of your clinical care experiences?
63	50	52	68	6	59	Do you feel you are well prepared to deal with issues related to reducing medical care costs?
53	50	57	45	8	51	Has your medical education prepared you to use computers and/or other information management technologies in your future education and medical practice?
53	25	24	26	*9	31	(% No) Do you feel there are subjects about which you should have received more or better instruction during your time here as a medical student?
19	20	21	31		91	Number of Students Responding
90	95	100	100		97	Percent of Total

INTERVIEWER GROUPS

AM = Amy Murphy-Spencer
DM = David Musick
DW = Amy Murphy-Spencer & David Musick
RJ = Roy Jarecky

Table 2

Significance of Differences in Proportions of UKCM Graduates Responding Positively-Negatively to Pairs of Survey Items Using McNemar's Correlated Proportions Test

Item Number	Item	1	7	2	5	3	4	6	8	9
	1		ND*	ND	01**	00	00	00	00	00
	7	ND		ND	ND	00	00	00	00	00
	2	ND	ND		ND	ND	00	00	00	00
	5	01	ND	ND		ND	ND	00	00	00
	3	00	00	ND	ND		ND	ND	00	00
	4	00	00	00	ND	ND		ND	ND	00
	6	00	00	00	00	ND	ND		ND	00
	8	00	00	00	00	00	ND	ND		00
	9	00	00	00	00	00	00	00	00	

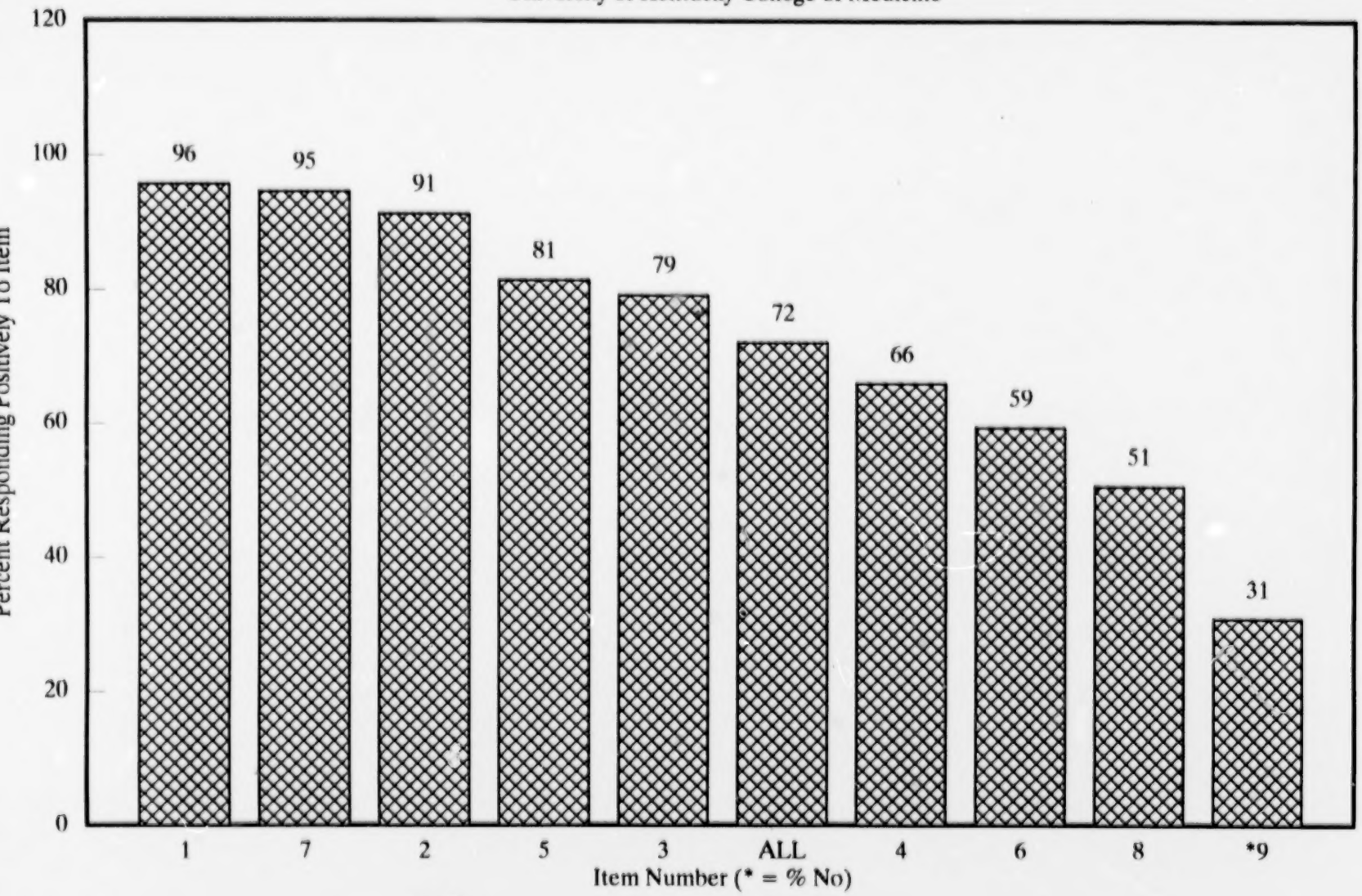
Item Number

* ND = No Difference between proportions of graduates responding positively-negatively to pairs of items

** Leading decimal point not printed

Survey of Graduating Seniors--May 1994

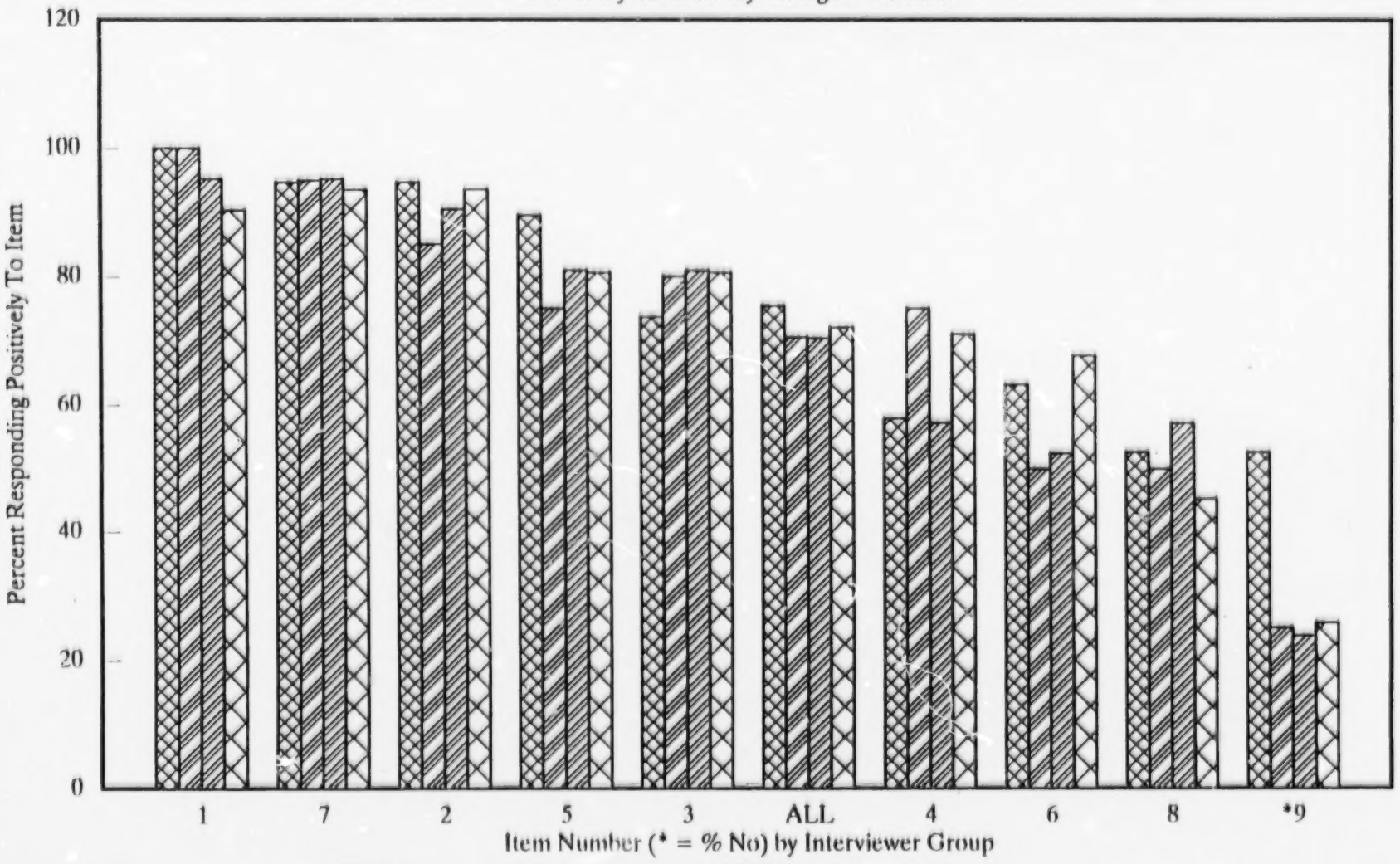
University of Kentucky College of Medicine



Graph 1

Survey of Graduating Seniors--May 1994

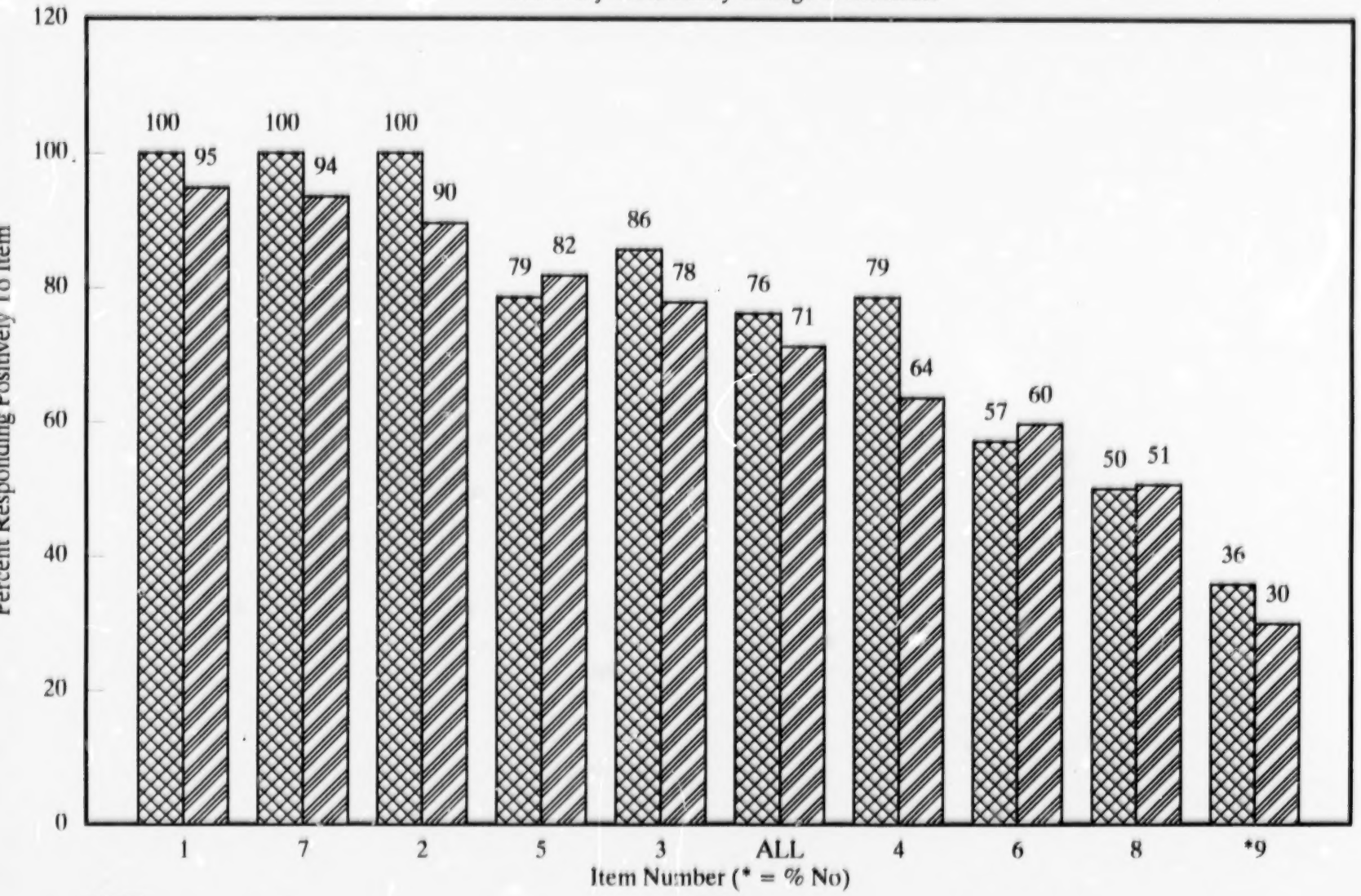
University of Kentucky College of Medicine



Graph 2

Survey of Graduating Seniors--May 1994

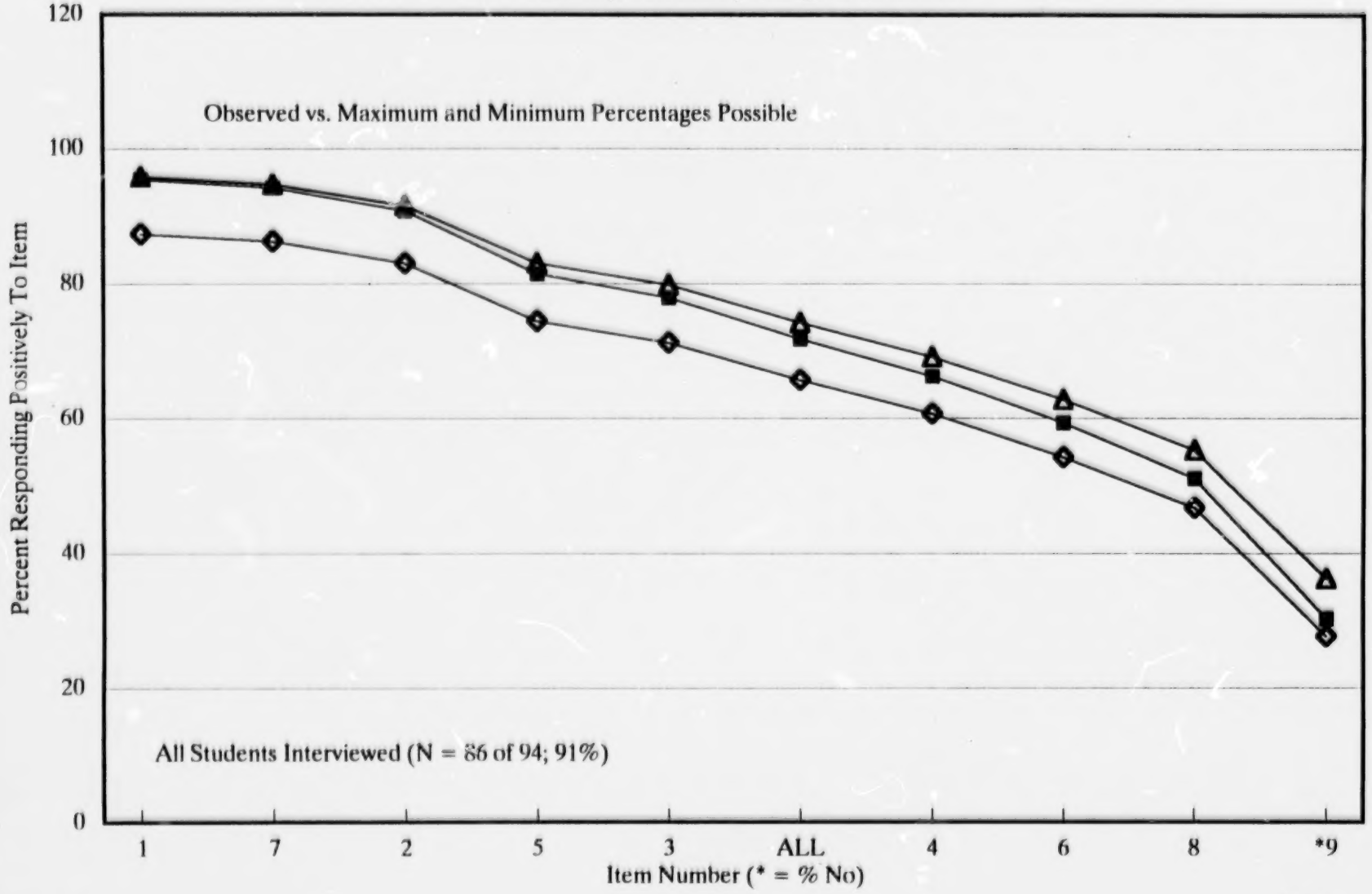
University of Kentucky College of Medicine



Graph 3

Survey of Graduating Seniors--May 1994

University of Kentucky College of Medicine



Graph 4